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Atty Dkt No. 2001-016-TAP (STK01016PUS)

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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1 1. () A method for storing data on a magnetic tape by
2 positioning a write head over the moving magnetic tape and providing a write current to the
3 write head, the method comprising:

4 detecting a writing error, wherein the writing error is indicated by at least one
5 of a data read back check and write head tracking information;

6 measuring span of the writing error;

7 disregarding the writing error when the writing error is indicated by the data
8 read back check and the span of the writing error is less than a first threshold wherein the first
9 threshold is based on the span of the writing error and capability of error correction
10 information to recover mis-recorded data;

11 suspending the write current in response to the writing error while allowing the
12 magnetic tape to continue moving when the writing error is indicated by the write head
13 tracking information;

14 repositioning data that would have been stored during the span of the writing
15 error when the span of the writing error is greater than the first threshold;

16 repositioning the magnetic tape when the span of the writing error is greater
17 than a second threshold wherein the second threshold is greater than the first threshold and is
18 based on the span of the writing error and capacity of the magnetic tape; and

19 supplying the write current to write the repositioned data when the span of the
20 writing error is greater than at least one of the first threshold and the second threshold.

1 2. () The method of claim 1 wherein error correction information
2 is encoded in the data on the magnetic tape and wherein the step of detecting a writing error
3 comprises:

4 comparing data written to the magnetic tape to data read from the magnetic tape
5 to detect errors in the data.

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1 3. () The method of claim 1 wherein error detection and
2 correction information is encoded in the data on the magnetic tape and wherein the step of
3 detecting a writing error comprises:

4 reading the error detection information to detect errors in the data; and
5 wherein the steps of repositioning data and supplying write current to store the
6 repositioned data are performed if errors in the data can not be corrected using the encoded
7 error correction information.

1 4. () The method of claim 1 wherein the step of detecting a
2 writing error comprises:

3 indicating a writing error based on positioning of the write head relative to the
4 magnetic tape.

1 5. () The method of claim 4 wherein the step of detecting a
2 writing error comprises:

3 indicating a writing error based solely on positioning of the write head relative
4 to the magnetic tape.

1 6. () The method of claim 1 wherein the includes write head
2 tracking information and wherein the step of detecting a writing error comprises:

3 indicating a writing error based on the write head tracking information.

7. (canceled)

8. (canceled)

1 9. (original) The method of claim 1 further comprising:

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2 formatting data for writing by grouping data into sub-blocks, adding sub-block
3 sequencing information, write pass information, and error detection information to each sub-
4 block of the data.

1 10. () The method of claim 1 further comprising distinguishing
2 current data from previously written data stored on the magnetic tape.

1 11. () A system for storing data on a moving magnetic tape, the
2 system comprising:

3 a servo position control for positioning a read/write head relative to the
4 magnetic tape and providing a tracking signal indicative of read/write head position relative
5 to tracking information on the magnetic tape; and

6 a processor for grouping data to be stored on the magnetic tape, adding write
7 pass information, encoding error correction and detection information in the data, detecting
8 a writing error wherein the writing error is indicated by at least one of a data read back check
9 and the write head tracking information, and measuring span of the writing error wherein the
10 processor disregards the writing error when the writing error is indicated by the data read back
11 check and the span of the writing error is less than a first threshold wherein the first threshold
12 is based on the span of the writing error and capability of error correction information to
13 recover mis-recorded data, suspends write current in response to the writing error while
14 allowing the magnetic tape to continue moving when the writing error is indicated by the write
15 head tracking signal relative to the tracking information, repositions data that would have been
16 stored during the span of the writing error when the span of the writing error is greater than
17 the first threshold, repositions the magnetic tape when the span of the writing error is greater
18 than a second threshold wherein the second threshold is greater than the first threshold and is
19 based on the span of the writing error and capacity of the magnetic tape, and supplies the write
20 current to write the repositioned data when the span of the writing error is greater than at least
21 one of the first threshold and the second threshold.

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1 12. () The system of claim 11 wherein the processor compares
2 data written to the magnetic tape to data read from the magnetic tape to detect errors.

1 13. () The system of claim 11 wherein the processor selectively
2 suspends the write signal based on positioning of the write head relative to the magnetic tape.

1 14. () The system of claim 13 wherein the processor selectively
2 suspends the write signal based solely on positioning of the write head relative to the magnetic
3 tape.

1 15. () The system of claim 13 wherein positioning of the write
2 head relative to the magnetic tape is detected based on a comparison of data written to, and
3 read from, the magnetic tape.

1 16. () The system of claim 13 wherein positioning of the write
2 head relative to the magnetic tape is detected based on write head tracking information stored
3 on the magnetic tape.

1 17. () The system of claim 11 wherein the magnetic tape
2 comprises data having read/write head tracking information and a plurality of generally parallel
3 data channels.

18. (canceled)

19. (canceled)

20. (canceled)

1 21. () A computer readable storage medium having stored data
2 representing instructions executable by a processor to control a magnetic tape device that

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3 positions a write head over a moving magnetic tape and provides a write current to the write
4 head, the computer readable storage medium comprising:

5 instructions for detecting a writing error, wherein the writing error is indicated
6 by at least one of a data read back check and write head tracking information;

7 instructions for measuring span of the writing error;

8 instructions for suspending the write current in response to the writing error
9 while allowing the moving magnetic tape to continue moving when the writing error is
10 indicated by the write head tracking information;

11 instructions for disregarding the writing error when the writing error is indicated
12 by the data read back check and the span of the writing error is less than a first threshold
13 wherein the first threshold is based on the span of the writing error and capability of error
14 correction information to recover mis-recorded data;

15 instructions for repositioning data that would have been stored during the span
16 of the writing error when the span of the writing error is greater than the first threshold;

17 instructions for repositioning the magnetic tape when the span of the writing
18 error is greater than a second threshold wherein the second threshold is greater than the first
19 threshold and is based on the span of the writing error and capacity of the magnetic tape; and

20 instructions for supplying the write current to write the repositioned data on the
21 moving magnetic tape when the span of the writing error is greater than at least one of the first
22 threshold and the second threshold.

1 22. () The computer readable storage medium of claim 21
2 wherein error correction information is encoded in the data on the moving magnetic tape and
3 wherein the instructions for detecting a writing error comprise:

4 instructions for comparing data written to the moving magnetic tape to data read
5 from the moving magnetic tape to detect errors in the data; and

6 instructions for indicating a writing error if errors in the data exceed a
7 corresponding read back error threshold.

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1 23. () The computer readable storage medium of claim 21 wherein
2 error detection and correction information is encoded in the data on the moving magnetic tape
3 and wherein the instructions for detecting a writing error comprise:
4 instructions for reading the error detection information to detect errors in the
5 data; and
6 instructions for indicating a writing error if errors in the data can not be
7 corrected by the encoded error correction information.

1 24. () The computer readable storage medium of claim 21
2 wherein the instructions for detecting a writing error comprise:
3 instructions for indicating a writing error based on positioning of the write head
4 relative to the moving magnetic tape.

1 25. () The computer readable storage medium of claim 24
2 wherein the instructions for detecting a writing error comprise:
3 instructions for indicating a writing error based solely on positioning of the
4 write head relative to the magnetic tape.

1 26. () The computer readable storage medium of claim 21
2 wherein the moving magnetic tape includes data having write head tracking information and
3 wherein the instructions for detecting a writing error comprise:
4 instructions for indicating a writing error based on the write head tracking
5 information.

27. (canceled)

1 28. (original) The computer readable storage medium of claim 21 further
2 comprising:

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3 instructions for formatting data for writing by grouping data into sub-blocks,
4 adding sub-block sequencing information, write pass information, and error detection
5 information to each sub-block of the data.

1 29. () The computer readable storage medium of claim 21 further
2 comprising instructions for distinguishing current data from previously written data stored on
3 the moving magnetic tape.

30. (canceled)

31. (canceled)